CLEAN VERSION OF PENDING CLAIMS

1. Polypeptides having antifreeze activity which can be obtained from carrots and which have an apparent molecular weight on SDS-PAGE of 36 kDa and isoforms or derivatives thereof which still possess antifreeze activity.

2. (amended) Polypeptides having antifreeze activity comprising one or more fragments (A-E) of the amino acid sequence as follows:

   SEQ ID NOS. 1-5, respectively, in order of appearance

   (K) LEU-PRO-ASN-LEU-PHE-GLY-LYS

   (L) ILE-PRO-GLU-GLU-ILE-SER-ALA-LEU-LYS

   (M) LEU-THR-ASP-LEU-SER-PHE-ASN-LYS

   (N) SER-LEU-ARG-LEU-SER-SER-THR-SER-LEU-SER-GLY-PRO-VAL-PRO-LEU-PHE-PHE-PRO-GLN-LEU-X-LYS

   (O) X-X-GLY-VAL-ILE-PRO-X-GLN-LEU-SER-THR-LEU-PRO-ASN-LEU-LYS

   and isoforms or derivatives thereof which still possess antifreeze activity.

3. Polypeptides having antifreeze activity comprising the fragments (A-E) of claim 2.

4. (amended) Polypeptides having antifreeze activity having an amino acid sequence as represented in SEQ ID NO. 7 and isoforms and derivatives thereof which still possess antifreeze activity.

5. (amended) An isolated nucleic acid sequence encoding the antifreeze polypeptide of claim 2 and alleles thereof encoding polypeptides which still possess antifreeze activity.

6. (amended) An isolated nucleic acid sequence corresponding to gene SEQ ID NO. 6 and alleles thereof encoding polypeptides which still possess antifreeze activity.

7. (amended) Method of obtaining polypeptides according to claim 2 whereby the polypeptide is isolated from cold-acclimatised carrots.

8. (amended) Method of obtaining polypeptides according to claim 2, whereby the polypeptide is expressed by a genetically modified organism.

9. Method according to claim 8, whereby the organism is a micro-organism, a plant or a cell culture.

10. (amended) An antibody capable of specifically binding the polypeptide of claim 2.

11. (amended) A polypeptide which has antifreeze activity that is immunologically related to the polypeptide of claim2 as determined by its cross reactivity with an antibody of claim 10.

12. (amended) Food product comprising a polypeptide of claim 2 with the proviso that the food product is not a carrot.

13. Food product of claim 12 being a frozen confectionery product or a frozen vegetable.

14. (amended) Method of producing a food product comprising an antifreeze polypeptide according to claim 2, comprising the steps of

(a) adding to the food product a composition comprising said antifreeze polypeptide; or

(b) in situ production of said antifreeze polypeptide.

15. (amended) Use of the polypeptide of claim 2 for increasing the frost tolerance of plants.

16. Micro-organisms, cell line or plant capable of expressing the polypeptide of claim 2, with the proviso that the plant is not an unmodified carrot plant.